UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/701,711	07/27/2001	Carlota Vinals y de Bassols	BM45324	7936

25308 7590 11/13/2003

DECHERT
ATTN: ALLEN BLOOM, ESQ
4000 BELL ATLANTIC TOWER
1717 ARCH STREET
PHILADELPHIA, PA 19103

EXAMINER	
BASKAR, PADMAVATHI	
ART UNIT	**PAPER NUMBER**
1645	15

DATE MAILED: 11/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/701,711	Y DE BASSOLS, CARLOTA VINALS	
	Examiner	Art Unit	
	Padmavathi v Baskar	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *61-68* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *61-64, 66-68* is/are rejected.

7)☒ Claim(s) *65* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *14* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Response to Amendment

1. The amendment filed on 8/11/03 has been entered into the record. Claims 61- 67 have been amended. Claims 61-68 are pending.

2. The examiner acknowledges various amendments to the specification in response to the previous Office action.

3. The IDS filed on 8/15/03 (paper # 10) is signed and a copy is attached with this office action.

Rejections Withdrawn

4. In view of amendments to claims, the rejection of claims 61-64 under 35 U.S.C. 102(b) as being anticipated by Bartos et al 1988(J.Infec.Dis, 158; 761-765) is withdrawn.

5. In view of amendments to claims, the rejection of claims 61- 64 and 66-68 under 35 U.S.C. 102(b) as being anticipated by Helminen et al 1994 (J.Infec.Dis, 170; 867-872) is withdrawn.

New Rejections Based on Amendment

Claim Rejections - 35 U.S. C. 112, first paragraph

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 61-64, and 66-68 are rejected under 35 U.5.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant is referred to the interim guidelines on written description published June 15, 1998 in the Federal Register at Volume 63, Number 114,

32639-32645 (also available at www.uspto.gov). This is a written description rejection.

The claims are drawn to an isolated recombinant polypeptide comprising (a) the amino acid sequence matching SEQ.ID.NO: 2; (b) an immunogenic polypeptide comprising a fragment sequence of at least 15 or 20 amino acids (the examiner is considering these as fragments) that matches an aligned contiguous segment of SEQ.ID.NO: 2, where in the isolated polypeptide, when administered to a subject in a suitable composition which can include an adjuvant, or suitable carrier coupled to the polypeptide, induces an antibody or T-cell response to a polypeptide having the sequence of sequence SEQ.ID.NO: 2.

The specification broadly describes as part of the invention, an isolated recombinant polypeptide of SEQ ID NO: 2, which is designated as a " BASB027" polypeptide from *Moraxella catarrhalis* strain Mc2931. The specification also teaches that this 95 kD (813 amino acids) recombinant polypeptide has been obtained by recombinant cloning and induces an antibody response in mice and the antibody raised against this polypeptide is able to recognize the full length polypeptide and other strains of *Moraxella catarrhalis.* However, the specification does not teach a fragment sequence of at least 15 or 20 contiguous segment of SEQ.ID.NO: 2 is able to induce an antibody and the antibody induced by fragments are able to recognize the full length protein. USPQ2d 1111 makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the 'written description' inquiry, whatever is now claimed." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that (he or she] invented what is claimed." (See Vas-Cath at page 1116).

The specification fails to teach the relevant identifying characteristics of fragments of SEQ.ID.NO: 2, sufficient to allow one skilled in the art to determine that the inventor had possession of the invention as claimed. See Fiers v. Revel, 25 U5PQ2d 1601, 1606 (CAFC

1993) and Amgen Inc V Chugai Pharmaceutical Co Ltd., 18 U5PQ2d 1016. One cannot describe what one has not conceived. See Fiddes v. Baird, 30 U5PQ2d 1481, 1483. In Fiddes v. Baird, claims directed to mammalian FGF's were found unpatentable due to lack of written description for the broad class.

Thus, an isolated polypeptide comprising SEQ ID NO: 2 meets the written description provision of 35 U.S.C. 112, first paragraph.

8. Claims 1-64 and 66-68 are rejected under 35 U.5.C. 112, first paragraph, because the specification, while being enabling for an isolated polypeptide or an immunogenic polypeptide comprising the amino acid sequence SEQ ID NO: 2, a fusion protein comprising the amino acid sequence SEQ.ID.NO: 2, and an immunogenic composition comprising the amino acid sequence SEQ.ID.NO: 2 and a pharmaceutically acceptable carrier does not reasonably provide enablement for a fragment sequence of at least 15 amino acids or 20 amino acids that matches an aligned contiguous segment of SEQ.ID.NO: 2, a fusion protein comprising said fragments and a vaccine composition comprising said fragments.

The claims are drawn to an isolated polypeptide comprising a member selected from the group consisting of (a) the amino acid sequence SEQ.ID.NO: 2; (b) an immunogenic polypeptide comprising a fragment sequence of at least 15 or 20 amino acids (the examiner is considering these as immunogenic fragments) that matches an aligned contiguous segment of SEQ.ID.NO: 2, wherein the isolated polypeptide, when administered to a subject in a suitable composition which can include an adjuvant, or suitable carrier coupled to the polypeptide, induces an antibody or T-cell response to a polypeptide having the sequence of sequence SEQ.ID.NO: 2.

The instant claims are evaluated for scope of enablement based on the Wands analysis. Many of the factors regarding undue experimentation have been summarized in *In re Wands*, 858 F.2d 731,8 USPQ2d 1400 (Fed.Circ.1988) as follows:

(1) the nature of the invention, (2) the state of the prior art, (3) the predictability or lack thereof in the art, (4) the amount of direction or guidance present, (5) the presence or absence of working examples, (6) the quantity of experimentation necessary, (7) the relative skill of those in the art, and (8) the breadth of the claims.

The nature of the disclosed invention is an isolated recombinant polypeptide of SEQ ID NO: 2. The specification broadly describes as part of the invention, an isolated recombinant polypeptide of SEQ ID NO: 2, which is designated as a " BASB027" polypeptide from *Moraxella catarrhalis* strain Mc2931. The specification also teaches that this 95 kD (813 amino acids) recombinant polypeptide has been obtained by recombinant cloning and induces an antibody response in mice and the antibody raised against this polypeptide is able to recognize the full length polypeptide and other strains of *Moraxella catarrhalis.* However, the specification does not teach a fragment sequence of at least 15 or 20 amino acids that match an aligned contiguous segment of SEQ.ID.NO: 2 is able to induce an antibody and the antibody induced by fragments are able to recognize the full length protein. The state of the prior art indicates that protein chemistry is probably one of the most unpredictable areas of biotechnology and is highly complex. As taught by the prior art (Rudinger et al, in "PEPTIDE HORMONES", edited by Parsons, J.A., University Park Press, June 1976, page 6), the significance of any particular amino acid and sequences for different aspects of biological activity can not be predicted a priori and must be determined empirically on a case by case basis. The art specifically teaches that even a single amino acid change in a protein leads to unpredictable changes in the biological activity of the protein. For example,

transforming growth factor alpha, replacement of aspartic acid at position 47 with alanine, or asparagine did not affect biological activity while replacement with serine or glutamic acid sharply reduced the biologic activity of the mitogen (Lazar et al., Molecular and Cellular Biology, 8(3): 1247-1252, 1988). These references demonstrate that even a single amino acid substitution or what appears to be an inconsequential chemical modification, will often dramatically affect the biological activity of a protein. Proteins with replacement of a single amino acid residue may lead to both structural and functional changes in biological activity and immunological recognition. For example, Jobling et al. (Mol. Microbiol. 1991, 5(7): 1755-67) teaches a panel of single amino acid substitutions by oligonucleotide directed mutagenesis which products proteins that differ in native conformation, immunological recognition, binding and toxicity, thus exemplifying the importance of structural components to both biological function and immunological recognition.

In addition to the art-recognized unpredictability, the specification has not provided any guidance as to how an artisan would have dealt with the art recognized difficulties related to the unpredictability as raised above. The specification, however, provides no working examples demonstrating enablement for making and using the claimed fragments. Thus, making and using fragments of a polypeptide must be considered highly unpredictable, requiring a specific demonstration. Absent such demonstration, the skilled artisan would be forced into undue experimentation to make and use the invention commensurate in scope with these claims.

Status of Claims

9. Claim 65 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 61-64 and 66-68 are rejected.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP ' 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Padma Baskar whose telephone number is (703) 308-8886. The examiner can normally be reached on Monday through Friday from 6:30 AM to 4 PM EST

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynette Smith, can be reached on (703) 308-3909. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

Padma Baskar Ph.D.

10/26/03

MARK NAVARRO
PRIMARY EXAMINER